

CONTATORE TRIFASE DI ENERGIA ELETTRICA

Lo strumento in questione occupa 4 DIN (4X18 mm) e si alloggia facilmente in un normale quadretto, che abbia la guida DIN, lo strumento va installato a “monte” dei dispositivi di protezione, poiché una eventuale condizione di guasto non deve potersi propagare attraverso lo strumento (esempio un corto circuito), l’alimentazione **(INGRESSO)** dello strumento avviene attraverso i morsetti inferiori L1 L2 L3 e L4/N (quest’ultimo è il neutro, se esistente), mentre **L’USCITA** è in corrispondenza dei morsetti superiori L5 L6 L7. I morsetti so+ ed so-, servono per poter collegare lo strumento ad un sistema di acquisizione dati, per esempio un plc, arduino ecc, e fornisce in uscita un impulso di caratteristiche note (vedere tab sottostante), I LED di segnalazione si accendono quando lo strumento è alimentato (Led Verde, Giallo e Rosso si illuminano se vi è presenza della fase corrispondente), se c’è consumo il led di destra farà dei lampeggi rossi, maggiore è la frequenza di lampeggio maggiore è il consumo, ogni 400 lampeggi viene registrato 1 kWh, quindi ogni 40 lampeggi viene registrato un decimo di kWh, il display, **retroilluminato di BLU**, mostra il consumo registrato, con una precisione del decimo di kWh, l’ultima cifra registrata (dopo la virgola) rappresenta il decimo di kWh.

CARATTERISTICHE TECNICHE

Classe di Precisione	1	
Installazione	Su guida Din standard, 4 din=72 mm	
Uscita SO+ e SO-		Risponde alla DIN EN50022
	Uscita Tensione	18-27 V
	Uscita I max	27 mA
	Max Lunghezza cavo so+ so-	20m
	Lunghezza (T) impulso	30 ms
Autoconsumo	<2W	
Display LCD	5+1 digit, 88888,8	
Tensione di funzionamento	240-415 V	
Corrente di funzionamento	0.02-100A	
Corrente avvio conteggio	15 mA	
Frequenza di funzionamento	50-60 Hz	
Temperatura di funzionamento	-20°C + 65°C	
Lampeggi per kwh	400 lampeggi/kWh	
Max Sezione conduttori	25 mmq	

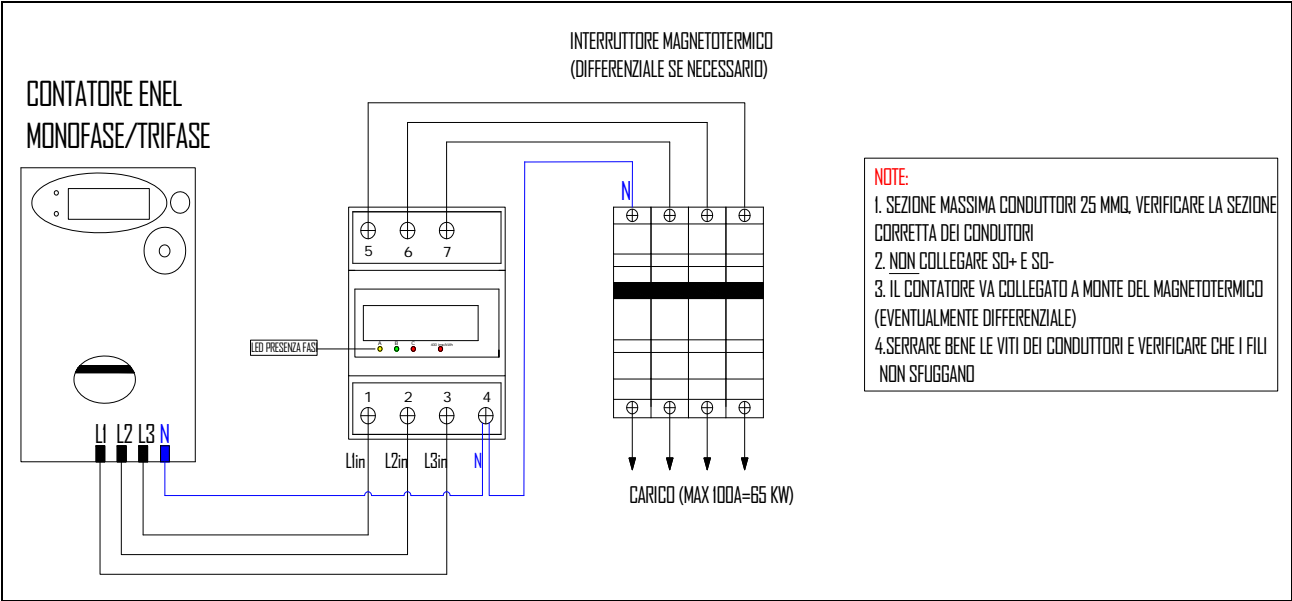


FIGURA 1: SCHEMA DI INSTALLAZIONE

SDM630D

DIN Rail Three Phase Two Wire Energy Meter with S0 Pulse Output
(Four modular)



User Manual

- 1.1 Safety instruction
- 1.2 Introductions
- 1.3 Performance criteria
- 1.4 Specifications
- 1.5 Dimension & material
- 1.6 Installation
- 1.7 Operating



1.1 Safety instructions

Information for Your Own Safety

This manual does not contain all of the safety measures for operation of the equipment (module, device), because special operating conditions, and local code requirements or regulations may necessitate further measures. However, it does contain information which must be read for your personal safety and to avoid material damages. This information is highlighted by a warning triangle and is represented as follows, depending on the degree of potential danger.



Warning

This means that failure to observe the instruction can result in death, serious injury or considerable material damage.



Caution

This means hazard of electric shock and failure to take the necessary safety precautions will result in death, serious injury or considerable material damage.

Qualified personnel

Operation of the equipment (module, device) described in this manual may only be performed by qualified personnel. Qualified personnel in this manual means person who are authorized to commission, start up, ground and label devices, systems and circuits according to safety and Regulatory standards.

Use for the intended purpose

The equipment (device, module) may only be used for the application specified in the catalogue and the user manual, and only be connected with devices and components recommended and approved by Eastron.

Proper handling

The prerequisites for perfect, reliable operation of the product are proper transport, proper storage, installation and proper operation and maintenance. When operating electrical equipment, parts of this equipment automatically carry dangerous voltages. Improper handling can therefore result in serious injuries or material damage.

- ✧ Use only insulating tools.
 - ✧ Do not connect while circuit is live (hot).
 - ✧ Place the meter only in dry surroundings.
 - ✧ Do not mount the meter in an explosive area or expose the meter to dust, mildew and insects.
 - ✧ Make sure the wires are suitable for the maximum current of this meter.
 - ✧ Make sure the AC wires are connected correctly before activating the current/voltage to the meter.
 - ✧ Do not touch the meter connecting clamps directly with metal, blank wire and your bare hands as you may get electrical shock.
 - ✧ Make sure the protection cover is placed after installation.
 - ✧ Installation, maintenance and reparation should only be done by qualified personnel.
 - ✧ Never break the seals and open the front cover as this might influence the function of the meter, and will cause no warranty.
 - ✧ Do not drop, or allow strong physical impact on the meter as the high precisely components inside may be damaged.
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1.2 Introduction

The Eastron SDM630D DIN rail three phase two wire energy meter with S0 pulse output. SDM630D has LCD display, based on kWh and the data can be transported by pulse output. The meter is provided with a non-volatile memory system that ensures that the readings are not lost or altered when power off. The meter allows up to 100A direct load in three phase application. It is perfect measuring instruments for AMR system or Energy monitoring and control system.

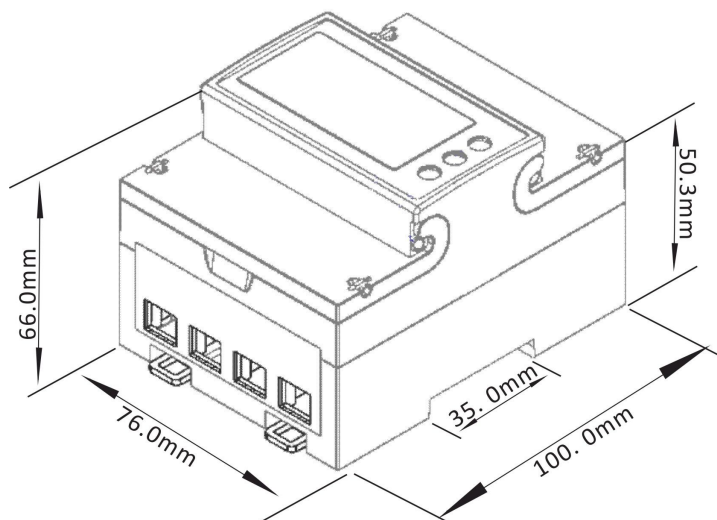
1.3 Performance criteria

Operating humidity	$\leq 85\%$
Storage humidity	$\leq 95\%$
Operating temperature	$-20^{\circ}\text{C} - +50^{\circ}\text{C}$
Storage temperature	$-30^{\circ}\text{C} - +70^{\circ}\text{C}$
International standard	IEC 62053-21
Accuracy class	0.5 or 1.0
Protection against penetration of dust and water	IP51
Insulating encased meter of protective class	II

1.4 Meter specifications

Meter type	SDM630D
Nominal voltage (Un)	230V AC
Operational voltage	0.7~1.3Un
Insulation capabilities - AC voltage withstand - Impulse voltage withstand	2KV for 1 minute 6kV – 1.2 μ S waveform
Basic current (Ib)	10A
Maximum rated current (Imax)	100A
Operational current range	0.4% Ib- Imax
Over current withstand	30Imax for 0.01s
Operational frequency range	50~60Hz $\pm 10\%$
Internal power consumption	$\leq 2\text{W}/10\text{VA}$
Test output flash rate (RED LED)	400imp/kWh
Pulse output rate (pins 5 & 6)	400imp/kWh
Consumption indicator (RED LED)	Flashing at load running
Data save	The data can be stored more than 20 years

1.5 Dimensions



1.6 Installation

CAUTION

- ◆ Turn off all the power before working on it.
- ◆ Always use a properly rated voltage sensing device to confirm that power is off.

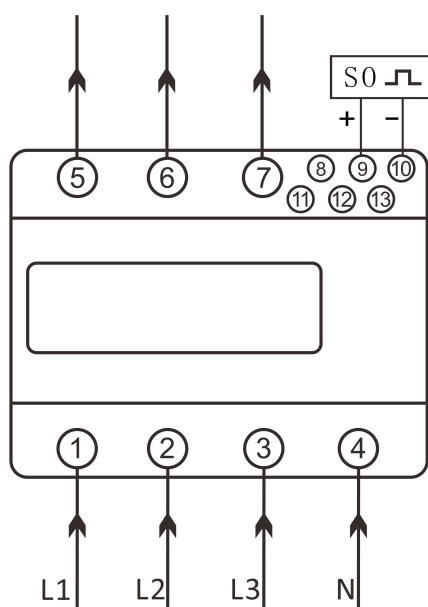
WARNING

- Installation should be performed by qualified personnel familiar with applicable codes and regulations.
- Use isolated tools to install the meter.
- Fuse or thermal cut-off or single-pole circuit breaker can't be fitted on the supply line and not the neutral line.
- Don't put your finger into the hole, because there is a screw inside.
- Please choose the available adapter which is supplied with the meter to suit the diameter of the cable.

- ✧ We recommend that the connecting wire which is used to connect the meter to the outside circuit should be sized according to local codes and regulations for the amp city of the circuit breaker or over current device used in the circuit.
- ✧ An external switch or a circuit-breaker should be installed on the inlet wire, which will be used as a disconnection device for the meter. And there it is recommended that the switch or circuit-breaker is near the meter so that it is more convenience for the operator. The switch or circuit-breaker should comply with the specifications of the building electrical design and all local regulations.
- ✧ An external fuse or thermal cut-off which will be used as an over-current protection device for the meter must be installed on the supply side wire, and it is recommended that the over-current protection device is near the meter so that it is more convenience for the operator. The over-current protection device should comply with the specifications of the buildings electrical design and all local regulations.
- ✧ This meter can be installed indoor directly, or in a meter box which is waterproofed outdoor, subject to local codes and regulations.

- ✧ To prevent tampering, secure the meter with a padlock or a similar device.
- ✧ The meter has to be installed against a wall which is fire resistant.
- ✧ The meter has to be installed in a good ventilated and dry place.
- ✧ The meter has to be installed in a protection box when placed in dangerous or dusty environment.
- ✧ The meter can be installed and used after being tested and sealed with a letter press printing.
- ✧ The meter can be installed on a 35mm DIN rail or direct on a meter board with screws.
- ✧ The meter should be installed in an available height so that it is easy to read.
- ✧ When the meter is installed in an area with frequent surges due to e.g. thunderstorms, welding machines, inverters etc, protect the meter with Surge Protection Devices.
- ✧ After installation, the meter must be sealed to prevent tampering.

Connection of the wires should be done in accordance with the underneath connection diagram.



1.7 Operating

Consumption indication

There is a red LED which is used as indicating power consumption in the front panel of SDM630D . When consumption happens, the LED will flash. The more quickly LED flashes, the more consumption there is. For this LED, the flash rate is indicated per kWh on the front panel.

Reverse indication

There is in the front panel a red LED which is used as indicator when reverse current happen.

Communication indication

Reading the meter

The SDM630D energy meter is equipped with 5+2 LCD display, which is used as recording consumption and can't be reset to zero.

Pulse output

The SDM630D DIN rail energy meter is equipped with a pulse output which is fully separated from the inside circuit. That generates pulses in proportion to the measured energy for accuracy testing.

The pulse output is a polarity dependant, passive transistor output requiring an external voltage source for correct operation. For this external voltage source, the voltage (U_i) should be 5-27V DC, and the maximum input current (I_{max}) is 27mA DC. To connect the impulse output, connect 5-27V DC to connector 6 (anode), and the signal wire (S) to connector 5 (cathode). The meter pulses are indicated on the front panel.

1.8 Technical support

If you have any questions please contact

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